UNITED STATES PATENT AND TRADEMARK OFFICE

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10/797,555	03/10/2004	Eun-Tae Won	678-1216	4407

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EXAMINER
BEHNCKE, CHRISTINE M

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 August 2009*.
2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.
3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,4,5,9,14,15 and 51-57* is/are pending in the application.
    4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5)☐ Claim(s) _____ is/are allowed.
6)☐ Claim(s) *1, 4, 5, 9, 14, 15, and 51-57* is/are rejected.
7)☐ Claim(s) _____ is/are objected to.
8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.
10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.
    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    a)☒ All   b)☐ Some *   c)☐ None of:
      1.☒ Certified copies of the priority documents have been received.
      2.☐ Certified copies of the priority documents have been received in Application No. _____.
      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)
2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.
4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.
5)☐ Notice of Informal Patent Application
6)☐ Other: _____.

DETAILED ACTION

This office action is in response to the Amendment and Remarks filed 8/27/2009,

in which claims 1, 4, 5, 9, 14, 15, and 51-57 were presented for examination.

Response to Arguments

Applicant's arguments with respect to claims 1, 4, 5, 9, 14, 15, and 51-57 have

been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can

be found in a prior Office action.

Claims 1, 4, 9, 14 and 15 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Lutter, US 6,792,351, in view of Lutter, US 6,615,137 (referred to as

"Lutter '137"), and in further view of Dube, et al., "Signal Stability based Adaptive

Routing (SSA) for Ad-Hoc Mobile Networks", University of Maryland, December 1996.

(**Claim 1**) Lutter describes a method for routing a vehicle management

information on an ad-hoc network from a source vehicle having an event by a nearby

vehicle, comprising the steps of: receiving a vehicle management information message

including vehicle management information having vehicle position and vehicle traveling

direction information from a source vehicle having the event and a routing condition

(column 4, lines 7-17, column 3, lines 18-25); searching the vehicle position and the

vehicle traveling direction information including in the received vehicle management

information (column 4, lines 18-29, and column 3, lines 18-25); identifying whether its

own vehicle management information of the source vehicle satisfies the searched

vehicle position and vehicle traveling direction (column 4, lines 18-41, column 3, lines

18-25); displaying the event of the source vehicle on a monitor based on a result of the

identifying step (column 4, lines 18-29 and column 3, lines 26-33); and routing the

received vehicle management information message of the source vehicle to vehicles

after identifying the routing condition (column 4, lines 30-40). Lutter describes the

message contains "kinematic state information relating to the current location and the

direction of travel of the" message sending or source vehicle. "The kinematic state may

include position, velocity vector, acceleration vector, range, angle, and heading

information." (column 4, lines 7-13.) Lutter incorporates by reference Lutter '137 which

teaches an ad hoc network method for transmitting messages, wherein the message

includes source vehicle information having vehicle position, vehicle traveling direction,

and speed information (column 2, lines 39-41); searching the message for the position,

direction, and speed information (column 4, lines 52-65); identifying whether the

receiving vehicle information satisfies the searched position, direction and speed

information (column 1, lines 38-46, column 5, lines 46-59); and displaying the source

vehicle on a monitor based on the identifying step (figure 7, column 6, lines 20-29). It

would have been very obvious to one of ordinary skill in the art at the time of the

invention to combine the teachings of Lutter '137 with the invention of Lutter because

comparing the speed of the surrounding vehicles assists the driver in determining the

likelihood of a collision (Lutter '137: column 5, lines 46-59) and merely expands on the

suggestion of Lutter that the vehicle speed is optionally included in the source vehicle

message (Lutter: column 4, lines 7-17).

Lutter describes the message including an indicator of the type of message being sent, but does not specify that the routing condition includes a routing type. Dube et al. teaches an adaptive routing protocol used in ad hoc networks, wherein the transmitted and received message includes a routing condition, the routing condition being a routing type for initiating one of a forward routing, a flooding routing, and a broadcasting routing (sections 4.2-4.3). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the invention of Lutter with the teachings of Dube et al, because as Dube et al. suggests, it is important for proper packet handling and transmission for the message types to be distinguished (broadcasted, flooded messages), one of the most logic means of distinguishing them is by identifying the type in the message (section 4.3).

(**Claim 4**) Lutter further describes the step of including at least one of position and direction of the source vehicle in the vehicle management information (column 4, lines 7-18 and column 2, line 64-column 3, line 17); and creating the vehicle management information using at least one of the vehicle driving information and vehicle safety information of the source vehicle (column 2, line 64-column 3, line 17).

(**Claim 9**) Lutter further describes wherein the routing condition includes ID (identification) and routing area information of a routing vehicle, and a message reception condition includes ID information of a destination vehicle (column 2, lines 35-45).

(**Claim 14**) Lutter describes an apparatus of a nearby vehicle for routing vehicle management information on an ad-hoc network from a source vehicle having an event,

the apparatus included in the nearby vehicle (figure 1) and comprising: a receiving for receiving a vehicle management information message from the source vehicle (column 4, lines 7-17, 30-41, transmitter 52 and receiver 50), the vehicle management information message including a vehicle management information having vehicle position and vehicle traveling direction from the source vehicles (column 4, lines 7-17, 30-41), and a routing condition (column 4, lines 7-17, 30-41); and a communicator for determining whether its own vehicle management information satisfies the received vehicle management information (column 4, lines 18-41, column 3, lines 18-25), displaying the event of the source vehicle based on a result if its own vehicle management information satisfies the received vehicle management information, and routing the received vehicle management information message to nearby vehicles (column 4, lines 18-40 and column 3, lines 26-33). Lutter describes the message contains "kinematic state information relating to the current location and the direction of travel of the" message sending or source vehicle. "The kinematic state may include position, velocity vector, acceleration vector, range, angle, and heading information." (column 4, lines 7-13.) Lutter incorporates by reference Lutter '137 which teaches an ad hoc network apparatus for receiving messages, wherein the message includes source vehicle information having vehicle position, vehicle traveling direction, and speed information (column 2, lines 39-41); searching the message for the position, direction, and speed information (column 4, lines 52-65); identifying whether the receiving vehicle information satisfies the searched position, direction and speed information (column 1, lines 38-46, column 5, lines 46-59); and displaying the source vehicle on a monitor

based on the identifying step (figure 7, column 6, lines 20-29). It would have been very obvious to one of ordinary skill in the art at the time of the invention to combine the teachings of Lutter '137 with the invention of Lutter because comparing the speed of the surrounding vehicles assists the driver in determining the likelihood of a collision (Lutter '137: column 5, lines 46-59) and merely expands on the suggestion of Lutter that the vehicle speed is optionally included in the source vehicle message (Lutter: column 4, lines 7-17).

Lutter describes the message including an indicator of the type of message being sent, but does not specify that the routing condition includes a routing type. Dube et al. teaches an adaptive routing protocol used in ad hoc networks, wherein the transmitted and received message includes a routing condition, the routing condition being a routing type for initiating one of a forward routing, a flooding routing, and a broadcasting routing (sections 4.2-4.3). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the invention of Lutter with the teachings of Dube et al, because as Dube et al. suggests, it is important for proper packet handling and transmission for the message types to be distinguished (broadcasted, flooded messages), one of the most logic means of distinguishing them is by identifying the type in the message (section 4.3).

(**Claim 15**) Dube further teaches wherein the routing condition is contained in a header of the information message (figure 3), and the information being transmitted is contained in the main body of the information message (section 4.2). It would have been obvious to one of ordinary skill to use the packet format as taught by Dube et al.

because Type of routing in the heading allows the vehicle to quickly process the packet for further transmission.

(**Claim 53**) Lutter further describes wherein the event of the source vehicle is one of warning of collision possibility or forward traffic accidents (figures 5 and 6, column 4, lines 18-40).

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lutter in view of Lutter '137 and Dube et al., and in further view of Kiendl et al., US 6,654,681.

Lutter in view of Lutter '137 and Dube et al. describe a method for forming an ad hoc network between vehicles to communicate vehicle management information and transmitting vehicle status information. Lutter does not specifically describe creating the vehicle management information including the vehicle safety information and vehicle driving information of the nearby vehicles. However, Kiendl et al. teaches a vehicle ad hoc network that teaches vehicles transmitting messages containing vehicle safety information based on the vehicle's own driving information and the vehicle driving information of the nearby vehicles (column 2, lines 15-30). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the method Lutter in view of Lutter '137 and Dube et al. with the teachings of Kiendl because as Kiendl suggests, transmitting information regarding vehicle safety status increases the efficiency and relevancy of the information transmitted, allowing vehicles to receive and

determine the most efficient route of travel and warn drivers of potential unsafe driving

events (column 3, lines 39-59 and column 4, lines 23-39).

Claim Rejections - 35 USC § 103

Claims 51 and 52 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Lutter in view of Lutter '137 and Dube et al., and in further view of Nuesser, US

6,870,487.

Lutter in view of Lutter '137 and Dube et al. describe the method and the

apparatus as applied to claims 1 and 14. Lutter further describes wherein the

transmitted information is used to update the data stored in the vehicle, map routes

(figures 6 and 7). Neither reference explicitly describes updating before transmitting the

message. However, Nuesser teaches a system for transmitting data packets between

vehicles, the data packets including vehicle management information (figure 4) and a

routing condition (figures 3 and 4), wherein the vehicle management information and

routing condition are updated before transmitting the vehicle management information

message (column 3, lines 9-25 and column 9, lines 25-40). It would have been obvious

to one of ordinary skill in the art at the time of the invention to update the vehicle

management information with received data before transmitting the message to check

for accuracies, as Nuesser suggests, adjust the message information routing condition

counter or included data based on sensed data (column 25-40).

Claim Rejections - 35 USC § 103

Claims 54-57 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Lutter in view of Lutter '137 and in further view of Dube et al., in further view of Breed,

US 2003/0191568.

(**Claims 54 and 56**) Lutter describes a method and an apparatus for transmitting

vehicle management information message on an ad-hoc network to nearby vehicles by

a source vehicle, collecting vehicle position, vehicle traveling direction, and speed

information of the source vehicle with a Global Positioning System (GPS) receiver and

an electronic map (figure 4, column 4, lines 7-17, 30-41, column 5, lines 10-18);

recognizing an event (column 4, lines 7-17, 30-41); generating a vehicle management

information message including vehicle management information having the vehicle

position and the vehicle traveling direction from the source vehicle and a routing

condition(column 4, lines 7-17, 30-41); and transmitting the vehicle management

information message to the nearby vehicles (column 4, lines 30-40). Lutter describes

the message contains "kinematic state information relating to the current location and

the direction of travel of the" message sending or source vehicle. "The kinematic state

may include position, velocity vector, acceleration vector, range, angle, and heading

information." (column 4, lines 7-13.) Lutter incorporates by reference Lutter '137 which

teaches an ad hoc network apparatus and method for receiving messages, wherein the

message includes source vehicle information having vehicle position, vehicle traveling

direction, and speed information (column 2, lines 39-41); searching the message for the

position, direction, and speed information (column 4, lines 52-65); identifying whether

the receiving vehicle information satisfies the searched position, direction and speed

information (column 1, lines 38-46, column 5, lines 46-59); and displaying the source

vehicle on a monitor based on the identifying step (figure 7, column 6, lines 20-29). It

would have been very obvious to one of ordinary skill in the art at the time of the

invention to combine the teachings of Lutter '137 with the invention of Lutter because

comparing the speed of the surrounding vehicles assists the driver in determining the

likelihood of a collision (Lutter '137: column 5, lines 46-59) and merely expands on the

suggestion of Lutter that the vehicle speed is optionally included in the source vehicle

message (Lutter: column 4, lines 7-17). Lutter explicitly describes using the traveling

direction to relay the message to other vehicles, however it would have been very

obvious to one of ordinary skill in the art at the time of the invention to use the vehicle

position and speed to route the message for the same reasons Lutter suggested: if the

vehicle is located too far away or is traveling at a significantly slower speed, the event

may not present a threat to the other vehicles and need not be transmitted (Lutter:

column 4, lines 30-41).

Lutter describes the message including an indicator of the type of message being

sent, but does not specify that the routing condition includes a routing type. Dube et al.

teaches an adaptive routing protocol used in ad hoc networks, wherein the transmitted

and received message includes a routing condition, the routing condition being a routing

type for initiating one of a forward routing, a flooding routing, and a broadcasting routing

(sections 4.2-4.3). It would have been obvious to one of ordinary skill in the art at the

time of the invention to combine the invention of Lutter with the teachings of Dube et al,

because as Dube et al. suggests, it is important for proper packet handling and

transmission for the message types to be distinguished (broadcasted, flooded

messages), one of the most logic means of distinguishing them is by identifying the type

in the message (section 4.3). Neither Lutter, Lutter '137, nor Dube et al. describe the

event being a traffic accident of the own vehicle. However, Breed teaches a vehicle

collecting information of the vehicle's position using a gyro sensor ([0048]), collecting

additional information of a driver's vehicle with an optional unit having a radar or a

camera mounted on the source vehicle ([0402]); and recognizing a traffic accident of the

driver's vehicle based on the collected additional information ([0035], [0208]).

   (**Claims 55 and 57**) Breed further teaches collecting various weather condition

information with a weather sensor (weather sensor 88); generating a warning message

according to the various weather condition information ([0521]); and transmitting the

warning message to nearby vehicles ([0208], [0522]).

   It would have been obvious to one of ordinary skill in the art at the time of the

invention to combine the invention of Lutter, Lutter '137 and Dube with the teachings of

Breed because as Breed suggests: gyro sensor in the navigation apparatus for the

suggested purpose as a backup sensor activated and used when the GPS satellites are

blocked ([0049]) and detecting and notifying other vehicles of weather and accident

conditions decreases the potential for further accidents ([0135]-[0139]).

Conclusion

   Applicant's amendment necessitated the new ground(s) of rejection presented in

this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHRISTINE M. BEHNCKE whose telephone number is (571)272-8103. The examiner can normally be reached on 8:30 am- 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas G. Black can be reached on (571) 272-6956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

CMB

/Thomas G. Black/

Supervisory Patent Examiner, Art Unit 3661